

**ABSTRACT**

This present invention for an in-line fluid heater suitable for heating ultrapure fluids utilizes a radiant energy source that generates infrared radiation to heat a fluid. The fluid to be heated is passed through a vessel such as a tube. The vessel, formed of PFA or  
5 polytetraflouroethylene, is coiled around the lamp or lamps. A chamber surrounds the lamp or lamps and the vessel. A temperature sensor at the outlet end of the vessel sends a signal to a controller that adjusts either the flow of fluid through the vessel or the intensity of the lamp or lamps, thereby controlling the fluid temperature at the outlet. The system is useful in any application requiring an ultraclean, non-contact method of raising the  
10 temperature of various liquids and gases.